Report for 2003FL39B: Sustainable Land Application-Conference Support

There are no reported publications resulting from this project.

Report Follows

Title: Sustainable Land Application – Conference Support

Focus Categories: NPP, WW, AG

Keywords: Animal wastes, biosolids, effluents, waste disposal, pathogens, metals, nutrients, organic compounds, policy

Duration: 03/01/2003 – 02/29/2004

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Congressional District: 6

Problems and Research Objectives:

Land application of non-hazardous materials (e.g., animal manures, biosolids, wastewater effluents, etc.) remains the most practical and economic means for farmers and municipalities to dispose of wastes, while benefiting soil fertility and soil physical and microbial properties. Knowledge and understanding of the numerous waste constituent reactions in soil are necessary, however, to make the practice sustainable. Years of research have generated the needed information for many waste constituents, but the information tends to be waste-specific, known primarily to scientists working with specific wastes, or completely lacking, e.g., about "emerging" pathogens. Presented together, this information would promote environmentally wise and sustainable land application, improve scientific/regulatory awareness of what is known, and identify research areas of high priority. We convened an international conference in January 2004 in Florida to accomplish these lofty goals. Project funds were used in partial support of the conference. Conference objectives were to:

1. Review fundamental and specific soil reactions of non-hazardous waste constituents (nutrients, organics, metals, and pathogens).
2. Improve (and extend to various audiences) understanding of contaminant reactions in soils, emphasizing the commonalities of soil reactions among wastes.
3. Synthesize multi-disciplinary information and characterize the "state-of-the-science" for land application. ("What do we know?").
4. Identify high priority and critical research needs. ("What needs to be learned?").
5. Promote intra- and inter-disciplinary approaches to solving problems of waste disposal/utilization in a sustainable manner.

Methodology:

Details of the conference format, including the agenda and a list of attendees, are given on the conference website (www.conference.ifas.ufl.edu/landapp). Extended abstracts of the plenary talks and abstracts of all other presentations, including poster presentations were made available in a book of abstracts to attendees.

Experts on soil reactions of metals, nutrients, pathogens, and organic compounds collectively prepared state-of-the-science summaries of research on constituents in

various non-hazardous wastes. With audience participation, high priority research needs were identified. Regulators and other waste management professionals were on hand to guide science interpretation and research agendas for the future.

Principal Findings and Significance:

State-of-the-science summaries and future research priorities were prepared and subjected to audience review and input the last day of the conference. The summaries are available on the conference website. Additionally, presenters were encouraged to prepare journal articles for possible publication in a national, peer-reviewed journal, Journal of Environmental Quality (JEQ). Those papers accepted will be published as a group in forth-coming issue of the journal.

Student Involvement:

Two graduate students (1 PhD and 1 MS) directly assisted in conference logistics. Another 9 PhD students presented poster papers on their research.